



$$v^2 = u^2 + 2as$$

$$v^2 = 0 + 2(9.81\text{ m/s}^2)(0.32\text{m})$$

$$v_2 = \sqrt{2(9.8)(0.32)} = 2.5\text{ m/s}$$

$$F_{\text{net}} = ma = \frac{\Delta P}{\Delta t} = \sum F$$



$$\frac{\Delta P}{\Delta t} = F_N - F_g$$

$$0 - \frac{(60\text{ kg})(-2.5\text{ m/s})}{0.050\text{ s}} = F_N - mg$$

$$F_{\text{net}}$$

$$\begin{aligned}
 |\vec{F}_N| &= 3000\text{N} + 60\text{kg}(9.81\frac{\text{N}}{\text{kg}}) \\
 &= \underline{3588.6\text{N}} = \underline{3.6 \times 10^3\text{N}} \\
 &\quad \underline{588.6\text{N}}
 \end{aligned}$$

$$\frac{3000\text{N}}{588.6\text{N}} = \text{about } 5\times$$

1. 4 points - physics of driving in the snow

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